REMARKS

Claims 1-20 are pending in the application, with claims 1, 8 and 15 being the independent claims. Claims 1, 3, 8 and 15 are currently amended. Claims 2 and 16 are canceled.

Applicant respectfully traverses the Examiner's rejection of each independent and dependent claim pending in the application.

Rejections under 35 U.S.C. § 101

Claims 8-20 are rejected under 35 U.S.C. 101 for being directed to non-statutory subject matter. Applicant respectfully traverses the rejections.

Claim 8 has been amended to recite in part:

at least one processor;

a computer readable memory comprising program instructions, executable by the at least one processor, for:

The at least one processor and computer readable memory make up a system. The instructions on the computer readable memory may be executed by the processor. The tangible result obtained through use of the system is the implementation by the processor of two virtual machines which are able to communicate with each other through changes in the computer readable memory. Amended claim 8 is directed to statutory subject matter, a system, including physical components and the tangible result of changes to the computer readable memory, and is therefore allowable over the rejection for being directed to non-statutory subject matter.

Claims 9-14 are allowable over the rejection for being directed to non-statutory subject matter for at least being dependent on claim 1.

Claim 15 has been amended to recite in part:

update a page table in a processor by placing a page associated with the first virtual machine in an address space associated with the second virtual machine.

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The tangible results of claim 15 are the changes made to the computer readable memory to allow communication between the first and second virtual machine. For example, when the first virtual machine communicates with the second virtual machine, the first virtual machine may write data that includes the contents of the communication to a page associated with the first virtual machine. The page associated with the first virtual machine may then be placed into the address space of the second virtual machine. As an address space exists in computer readable memory, amended claim 15 stores and moves data within the computer readable memory containing the address space of the second virtual machine. Amended claim 15 is directed toward statutory subject matter, having the tangible result of changes made to the computer readable memory, and is therefore allowable over the rejection for being directed to non-statutory subject matter.

Claims 16-20 are allowable over the rejection for being directed to non-statutory subject matter for at least being dependent on claim 15.

Rejections under 35 U.S.C. § 102

Claims 1-20 are rejected under 35 U.S.C. 102 as being anticipated by US Pat. No. 7,181,744 (Shultz). Applicant respectfully traverses these rejections.

Claim 1 has been amended to incorporate the features of claim 2. Amended claim 1 is allowable over Shultz. Shultz does not disclose or suggest updating a page table in a processor by placing a page associated with the first virtual machine in an address space associated with the second virtual machine.

Shultz appears to suggest the use of shared memory for virtual machine communication (Shultz, col. 4, lines 51-55). This shared memory is shared by all of the virtual machines, and each virtual machine may read and write to any area of the shared memory (Shultz, col. 4, lines 51-55). When a first virtual machine wishes to communicate with a second virtual machine according to Shultz, the first virtual machine will write its message into the shared memory, and then add a work item to the work queue, also in shared memory, of the second virtual machine (Shultz, col 6., lines 16-30). The work item tells the second virtual machine where in shared memory to retrieve the message written by the first virtual machine (Shultz, col. 6, lines 54-56).

The method of communication between virtual machines in Shultz is wholly different from updating a page table in a processor by placing a page associated with the first virtual machine in an address space associated with the second virtual machine. Placing a page associated with the first virtual machine in an address associated with the second virtual machine means the first virtual machine does not write its message to the second virtual machine in a shared memory accessible by all of the virtual machines. Instead, the message is written into a memory area associated with and therefore accessible to only the first virtual machine. The page of memory in which the message is written may then be placed in the address space of the second virtual machine by, for example, a higher level routine that does have access to all of memory, at which time the second virtual machine may have access to the message. The second virtual machine cannot access the message until the page containing the message is placed in the second virtual machine's address space, because the first virtual machine writes the message to a page in the first virtual machine's address space, which cannot be accessed by the second virtual machine. The first virtual machine cannot write the message directly to the second virtual machine's space, because only the second virtual machine, among all other virtual machines, may directly access the second virtual machine's address space. This is wholly different from the shared memory used for communication in Shultz, in which the second virtual machine may be allowed to access the message immediately after it is written to the shared memory by the first virtual machine because both virtual machines have access to the entirety of the shared memory address space. Amended claim 1 is therefore allowable over Shultz.

Claims 2-7 are allowable over Shultz for at least being dependent on the allowable claim 1.

Claim 8 recites a virtual machine monitor coupled to the first and second virtual machines and to the first and second virtual machine control structures, the virtual machine monitor adapted to supervise communication between the first and second virtual machines. This is wholly different from the dispatcher (Shultz, fig. 1, 22a-c) disclosed in Shultz. In Shultz, each virtual machine has a separate dispatcher (Shultz, fig. 1, 12, 14, 16, 22a-c). The dispatcher cannot supervise communication between virtual machines in any way. The function of the dispatcher in Shultz is to look for new work items in the work queue for the dispatcher's virtual machine, parse work items in the work queue, and determine what functions to call to perform work items (Shultz, col. 5, lines55-

64). Thus, Shultz does not disclose or suggest a virtual machine monitor coupled to the first and second virtual machine, as each dispatcher is coupled to a single virtual machine, nor does Shultz disclose the virtual machine monitor adapted to supervise communication between the first and second virtual machines, as the dispatcher may only process work items from the work queue to which the dispatcher is coupled, and is thus only involved in communication when there are communication work items placed on the work queue. Claim 8 is therefore allowable over Shultz.

Claims 9-14 are allowable over Shultz for at least being dependent on allowable claim 8.

Claim 15 has been amended to incorporate the features of claim 16. Claim 16 has been canceled. Amended claim 15 is allowable over Shultz. The features recited in claim 16 are similar to the features recited in claim 2 which were incorporated into amended claim 1. For reasons similar to those discussed for amended claim 1, Shultz fails to disclose or suggest the features of amended claim 15, which are similar to those recited in amended claim 1. Amended claim 15 is therefore allowable over Shultz.

Claim 17-20 are allowable over Shultz for at least being dependent on allowable claim 15.
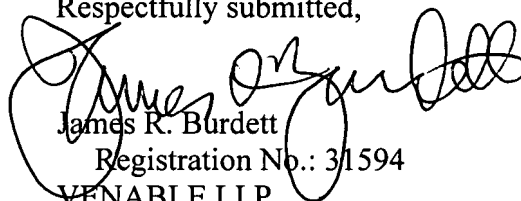
Conclusion

All of the stated grounds of rejection have been properly traversed. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Dated: 6/21/2007

Respectfully submitted,

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